

Complete Summary

GUIDELINE TITLE

Tularaemia.

BIBLIOGRAPHIC SOURCE(S)

Finnish Medical Society Duodecim. Tularaemia. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2004 Aug 12 [Various].

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

METHODOLOGY - including Rating Scheme and Cost Analysis

RECOMMENDATIONS

EVIDENCE SUPPORTING THE RECOMMENDATIONS

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

IMPLEMENTATION OF THE GUIDELINE

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT

CATEGORIES

IDENTIFYING INFORMATION AND AVAILABILITY

DISCLAIMER

SCOPE

DISEASE/CONDITION(S)

Tularaemia

GUIDELINE CATEGORY

Diagnosis

Prevention

Treatment

CLINICAL SPECIALTY

Family Practice

Infectious Diseases

Internal Medicine

Pediatrics
Preventive Medicine

INTENDED USERS

Health Care Providers
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

Evidence-Based Medicine Guidelines collect, summarize, and update the core clinical knowledge essential in general practice. The guidelines also describe the scientific evidence underlying the given recommendations.

TARGET POPULATION

Patients with suspected or known tularaemia

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. Evaluation of clinical picture
2. Serology (antibody titre)
3. Bacterial culture of secreting lesion

Treatment

1. Fluoroquinolones (e.g., ciprofloxacin)
2. Doxycycline
3. Streptomycin
4. Aminoglycosides

Note: Guideline developers considered but did not recommend beta-lactam antibiotics as treatment due to ineffectiveness

Prevention

1. Attenuated vaccine (note: not currently available)
2. Prophylaxis for exposed individuals: (doxycycline, ciprofloxacin)

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The evidence reviewed was collected from the Cochrane database of systematic reviews and the Database of Abstracts of Reviews of Effectiveness (DARE). In addition, the Cochrane Library and medical journals were searched specifically for original publications.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

- A. Strong research-based evidence. Multiple relevant, high-quality scientific studies with homogenic results.
- B. Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
- C. Limited research-based evidence. At least one adequate scientific study.
- D. No research-based evidence. Expert panel evaluation of other information.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The levels of evidence [A-D] supporting the recommendations are defined at the end of the "Major Recommendations" field.

Aims

- Suspect tularaemia in patients with fever, lymphadenopathy, and an ulcerated skin lesion (Picture 1 in the original guideline document) at the site of a mosquito bite or a scratch.
- Begin treatment on the basis of the clinical picture if the symptoms are typical. Diagnosis can be confirmed with serology.

Transmission

- The most important reservoir host is the mole.
- The infection is transmitted by
 - Mosquitoes (most important)
 - Other blood-sucking arthropods (horse-flies, black flies, ticks)
 - Bites or scratches of a sick animal
 - Inhalation of infected aerosols
 - Ingestion of contaminated water or food
 - Ingestion of meat from an affected animal (even after freezing the meat)
- Incubation period is 1 to 14 days (mean 4 days).

Symptoms

- Varying clinical manifestations:
 - The ulceroglandular form (75 to 85% of the cases) causes fever, a small infected skin lesion as well as swelling and tenderness of regional lymph nodes.
 - The glandular form (5 to 10% of the cases) causes fever and lymphadenopathy but no skin lesions.
 - The typhoidal form (5 to 15% of the cases) causes severe systemic symptoms (fever, fatigue and weight loss) and possibly enlargement of the liver and spleen.

- The oculoglandular form causes granulomatous conjunctivitis with regional lymphadenopathy.
- The oropharyngeal form (2 to 4% of the cases) causes tonsillitis, pharyngitis, and cervical lymphadenopathy.
- Symptomless infection is common (about 50% of the cases).
- Rash has been reported in up to 20% of the patients.
- Pneumonia is seen in 15% of the ulceroglandular cases and in nearly all patients with other forms of the disease.
- Elevated liver enzyme values, enlarged liver
- Peritonitis, meningitis, and osteomyelitis are rare.
- C-reactive protein (CRP) increases moderately, erythrocyte sedimentation rate (ESR) to a lesser extent.
- Anaemia

Diagnosis

- Treatment is begun on the basis of the clinical picture.
- Diagnosis is confirmed by serology. The antibody titre rises first 10 to 14 days after onset of fever. The blood samples are taken 2 to 3 times, at 2-week intervals. A rise in the antibody titre is an indication of a recent infection. A 4-fold rise of the titre, or a single clearly elevated titre (1:160 with agglutination technique, 1:128 with microagglutination technique), is considered diagnostic.
- Bacterial culture of the secreting lesion can also be performed.

Treatment

- Fluoroquinolones are the recommended antibiotic therapy in mild and moderate cases (the dose of ciprofloxacin is 500 milligrams (mg) twice a day [b.d.] for adults). Alternatively, doxycycline (100 mg b.d. for 10 to 14 days, or 2 to 3 weeks after onset of symptoms), or streptomycin or aminoglycosides for 1 to 2 weeks can be used depending on the severity of the disease (Cerny, 1994; Jacobs, 1996; Russell et al., 1998; Scheel, Reiersen, & Hoel, 1992)
- If the patient has severe symptoms, an infectious disease physician should be consulted.
- Beta-lactam antibiotics are ineffective.
- Children are managed under the supervision of a paediatrician. Ciprofloxacin has been used for children in verified cases of tularaemia. The dose is 15 to 20 mg/kg daily divided into two doses.

Prevention

- A live attenuated vaccine has been developed, but is not currently available.
- Recommendations have been issued in the United States for measures to be taken in case tularaemia is used as a biological weapon. Doxycycline and ciprofloxacin are recommended for exposed individuals during an epidemic (Dennis et al., 2001).

Definitions:

Levels of Evidence

- A. Strong research-based evidence. Multiple relevant, high-quality scientific studies with homogenic results.
- B. Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
- C. Limited research-based evidence. At least one adequate scientific study.
- D. No research-based evidence. Expert panel evaluation of other information.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

[References open in a new window](#)

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Concise summaries of scientific evidence attached to the individual guidelines are the unique feature of the Evidence-Based Medicine Guidelines. The evidence summaries allow the clinician to judge how well-founded the treatment recommendations are. The type of supporting evidence is identified and graded for select recommendations (see the "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Accurate diagnosis and appropriate treatment of tularaemia
- Appropriate preventive measures in the event tularaemia is used as a biological weapon

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

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Finnish Medical Society Duodecim. Tularaemia. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2004 Aug 12 [Various].

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2004 Aug 12

GUIDELINE DEVELOPER(S)

Finnish Medical Society Duodecim - Professional Association

SOURCE(S) OF FUNDING

Finnish Medical Society Duodecim

GUIDELINE COMMITTEE

Editorial Team of EBM Guidelines

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Primary Author: Janne Laine

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

This guideline is included in a CD-ROM titled "EBM Guidelines. Evidence-Based Medicine" available from Duodecim Medical Publications, Ltd, PO Box 713, 00101 Helsinki, Finland; e-mail: info@ebm-guidelines.com; Web site: www.ebm-guidelines.com.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

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